

THE

March, 1959

CHEMIST

VOLUME XXXVI



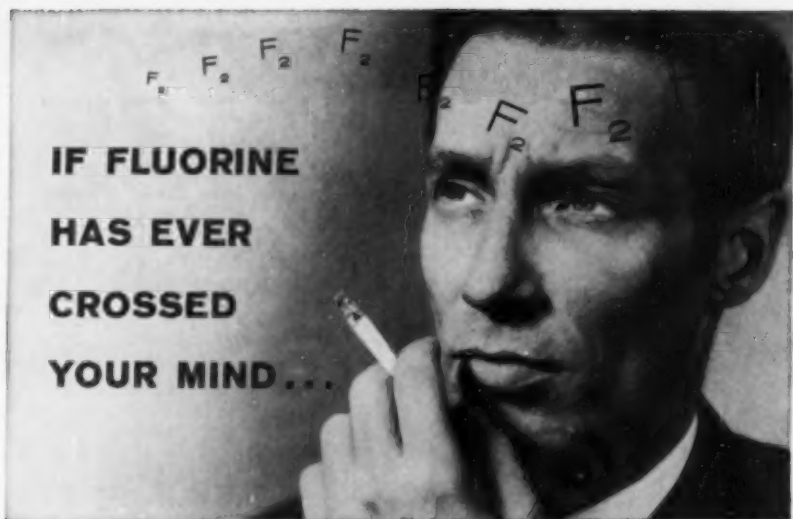
NUMBER 3



Dr. J. W. E. Harrison, F.A.I.C.

Receives Honor Scroll of Pennsylvania AIC Chapter.

(See page 89)



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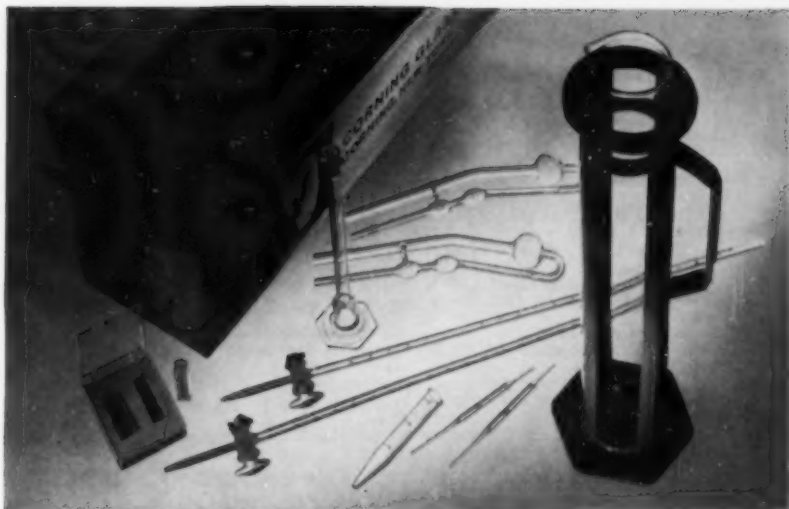
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Vol. XXXVI

March, 1959

Number 3

THE AMERICAN INSTITUTE OF CHEMISTS

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Deadlines for THE CHEMIST: For the May issue the deadline is April 15.

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THE AMERICAN INSTITUTE OF CHEMISTS does not necessarily endorse any of the facts or opinions advanced in articles which appear in THE CHEMIST.

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TO COME IN APRIL

Dr. Foster D. Snell, former AIC president, received Honorary AIC Membership in January. He presents, "The Independent Consultant and Independent Laboratory as a Professional Activity." Dr. W. E. Peterson's paper on "Better Training of Secondary School Science Teachers," postponed from March, will appear.

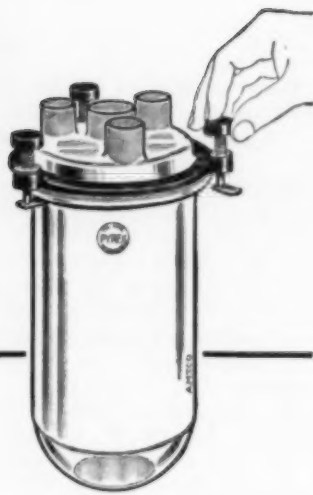
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Capacity, ml.....	500	1000	2000	3000	4000
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The 36th Annual Meeting The American Institute of Chemists

MAY 7-8, 1959

TRAYMORE HOTEL, ATLANTIC CITY, N. J.

Program-in-Part

Thursday, May 7, 1959

- 10:00 a.m. Annual Business Meeting.**
- 12:15 p.m. Keynote Luncheon**
Presiding, Dr. Emil Ott, *AIC President*
Speaker, The Hon. Robert B. Meyner, *Governor, State of New Jersey*
Subject: "The Importance of New Jersey Industries in the Economy."
- 2:00 p.m. First Professional Session**
Subject: National Progress Through Chemistry.
Presiding: Dr. W. E. Kuhn, *AIC Incoming President*
- 2:10 p.m. Research in Government and Industry**
Speaker: Lt. General James M. Gavin (Retired),
Vice President, Arthur D. Little, Inc.
- 2:50 p.m. The Chemist and World Economy**
Speaker: Dr. R. H. Rowntree,
Chief, Economics Division, Export-Import Bank of Washington
- 3:30 p.m. The Changing Character of Chemical Research
in Government**
Speaker: Dr. Edward Wichers,
Associate Director of the National Bureau of Standards
- 4:10 p.m. The Chemist and National Defense**
Speaker: Major General Marshall Stubbs,
Chief Chemical Officer, Department of the Army
- 6:00 p.m. Reception for the Gold Medalist**
- 7:00 p.m. Gold Medal Banquet**

Friday, May 8, 1959

- 9:15 a.m. Second Professional Session**
Subject: The Importance of Industrial Research to the Economy
Presiding: Dr. Cecil Brown,
Manager, Scientific Liaison, Esso Research & Engineering Co.

- 9:20 a.m. The Growth of Research and Its Consequences to the Economy**
Speaker: Dr. Carl F. Prutton,
Executive Vice President, Food Machinery & Chemical Corp.
- 10:00 a.m. The Chemist and Engineer in the Development of Plastics**
Speaker: Dr. Robert W. Cairns,
Director of Research, Hercules Powder Company
- 10:40 a.m. Industrial Research—Facts and Finance**
Speaker: Dr. Augustus B. Kinzel,
Vice President—Research, Union Carbide Corp.
- 11:20 a.m. Research: Insurance for Tomorrow**
Speaker: Dr. W. E. Hanford, *Vice President for Research & Development, Olin Mathieson Chemical Corp.*
- 12:30 p.m. Institute Luncheon**
Presiding: Dr. Henry B. Hass,
Past President and Chairman of the Board, AIC
Announcement of Honorary Membership Awards for coming year.
President's Address: Dr. Emil Ott
- 2:15 p.m. Third Professional Session**
Subject: Scientific Training for the Economy
Presiding: Dr. B. D. Van Evera,
Dean for Sponsored Research, The George Washington University
- 2:25 p.m. The Challenge of Russian Education**
Speaker: Dr. Raymond Ewell,
Vice-Chancellor for Research, The University of Buffalo
- 3:25 p.m. American Education Meeting the Soviet Challenge**
Speaker: Dr. William E. Stevenson, *President, Oberlin College*

Ladies' Program

Thursday, May 7, 1959

- 10:00 a.m. Opening of Ladies Hospitality Headquarters**
(Fountain Room.) Gift, courtesy of Shulton, Inc.
- 10:30 a.m. Shopping On Your Own.**
- 12:15 p.m. Keynote Luncheon**
(See general program.)
- 2:30 to 5:30 p.m. Swimming Party**
Traymore's beautiful Indoor Pool. OR
- 3:00 p.m. Visit to Fischer Greenhouses**
(Fischer specializes in African violets.)
- 6:00 p.m. Gold Medal Reception and Banquet**
(See general program.)
- 8:45 to 9:30 p.m. String Ensemble**
(Main lobby.)

ANNUAL MEETING PROGRAM

Friday, May 8, 1959

8:00-10:00 a.m. Coffee Hours.

(Balcony.)

10:00 a.m. to 12:00. Swimming Party

Traymore's Pool. OR

10:00 a.m. Visit to Lenox China Showroom and Factory.

Current China patterns will be seen. Museum pieces will be on display and showroom hostess will give history of these pieces. Guests free to browse and make purchases.

12:30 p.m. Institute Luncheon

(See general program.)

3:00 p.m. "Togetherness"

(Submarine Room.)

(The complete program will appear in the April Chemist)

(Inquiries may be sent to the General Chairman:

JOHN KOTRADY, The Texas Co., 135 E. 42nd St., New York 17, N. Y.)

The 8th Annual Conference on Applications of X-ray Analysis will be held at Stanley Hotel, Estes Park, Colorado, August 12-14. Persons desiring to contribute papers in the fields of X-ray fluorescence, diffraction microscopy or instrumentation should contact: William M. Mueller, AXRA Conference Chairman, Metallurgy Div., Denver Research Inst., University of Denver, Denver 10, Colo.

Engineers Joint Council of 29 W. 39th St., New York 18, N.Y., on January 16, cited the Westinghouse Educational Foundation and the Carnegie Institute of Technology for pioneering the encouragement of young men and women to seek careers in engineering and science.

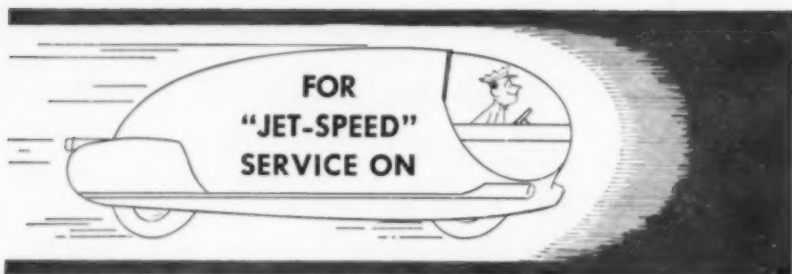
The American Institute of Chemical Engineers announces a lecture series on Chemical Reactor Design, starting March 24, to be held each Tuesday at 7-9 p.m. for six consecutive weeks at the Texas Company Auditorium, 135 E. 42nd St., New York, N. Y. For information: David A. Bray, Chas. Pfizer & Co., Inc., 630 Flushing Ave., Brooklyn 6, N.Y.

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EDITORIAL

Satellites, Amoebae, Catalysts, and Madison Avenue

(A BLUEPRINT FOR ACTION)

Martin B. Williams, F.A.I.C.

*Chairman, Committee on Chapter Activities, AIC
700 Ward Ave., N.E., Huntsville, Alabama*

Satellites

SINCE the advent of the artificial satellites (Sputniks and Explorers) the attention of the American public has been focused on science as never before. Science is not possible without scientists. Scientists can not achieve their maximum output as individuals or as members of a team, unless they have adequate professional and economic status. The achievement of these goals for chemists and chemical engineers was the reason for the establishment of the AIC some thirty-six years ago. At present, we have a better opportunity of achieving our objectives than we have ever had since the AIC was founded; but the opportunity may not last forever. Is it not imperative on us to take full advantage of this opportunity now?

Amoebae

The amoeba grows until it reaches a certain size, and then splits into two new amoebae. Each of these grows, and when it becomes the proper size, another split occurs, and the process goes on and on. Is there not a lesson here for the AIC? We now

have 2850 members in 17 chapters. Many members, because of the distance from the meeting place of their local chapter, never attend a meeting; thus they receive only a fraction of the benefits which they should have from AIC membership. The Committee on Membership and the Committee on Chapter Activities would like to see a membership of 5000 and a total of 25 chapters by the time of our Annual Meeting in Atlantic City in May; and a total of 15,000 members and 100 chapters within three years. Should not our present chapters examine themselves, and if they have too large a membership over too great a geographical area, follow the lead of the amoeba? A good start has been made with the formation of the Piedmont, Midwest, Delaware and Southwest Chapters. More needs to be done. Ideally a chapter should consist of 50 to 200 members located within a radius of 25 miles from a central meeting place.

Catalysts

A small amount of the right catalyst often speeds up the rate of a chemical reaction. The formation of

the new chapters was quite largely due to the activity of some catalytic individuals: Mr. Shingler in Atlanta, Dr. Seiden in Kansas City, Dr. Bruck in Wilmington, and Mr. Pafford in Houston. Undoubtedly there are many more catalytic personalities in our membership; some are already at work organizing new chapters; others have not yet been activated. We bestow heartiest congratulations to the former group, and plead that the latter become activated.

Any AIC member who wishes to organize a new chapter is encouraged to do so and is invited to become a member of this committee. (While we are undoubtedly the largest of all committees, there is always room for several more!) Forming a new chapter is not something that can be done with precipitous haste, but neither is it a long drawn-out affair with yards of red tape. A petition for the formation of the new chapter, signed by a minimum of 10 Fellows in the area, should be presented to the National Council. Copies of the petition form may be obtained from AIC headquarters or from the Committee on Chapter Activities.

All areas of the U. S. are now included in one of our Chapters or in a chapter in the process of formation. (See page 540, December 1958 CHEMIST.) Questions concerning the exact area to be covered should be worked out jointly between the petitioning group and the established

chapter from which the new territory is being taken. Our Committee includes one representative at least from each of our chapters. This representative, the Committee as a whole, our national officers, and the members of the National Council will be glad to help any new group get started.

If you desire to have a chapter in your immediate area, and if you know other members who might be interested, discuss the possibility with them. If you know no other members in your area, refresh your memory by looking at the geographical directory in the May 1958 CHEMIST. If you find no nearby members, but have some professional acquaintances who are qualified for AIC membership, get them to fill out an application for membership RIGHT AWAY (Applications, statements of our objectives, stationery, and supplies, can be obtained from AIC headquarters or from Dr. L. T. Eby, Chairman of the Membership Committee).

If the first response from those you contact is apathetic or even pessimistic, do not be discouraged. (Apathy or pessimism is not a function of geographical location, size of community, other activities that take the time of potential members, attitude of other organizations, or anything else—chemists just react that way!)

If you send out letters to 50 people in your area regarding the formation of a new Chapter, probably 30

won't reply; 2 or 3 will have moved to another location; maybe 5 will be enthusiastic; 10 or 12 will be on the fence, and maybe a couple will be opposed. If you are that successful, you are doing fine—the 5 enthusiastic ones will build up support for the idea. Most of the others will eventually come around, if you drop them a second or third letter and don't let their initial lack of enthusiasm keep you from going ahead. Invite the local members and prospects to an informal get-together, and you can definitely count on a few accepting the invitation; a few others deciding to come at the last minute, AND on something concrete resulting from the first meeting.

Get those who come to sign the petition and help you get other signatures; elect temporary officers, and send the petition to the Secretary of the AIC. It is that simple! Local chapters have a large measure of autonomy as to frequency of meetings, type of meetings, local dues, projects undertaken, etc., so you can carry out the program that has the greatest appeal to your own group—not one that is passed down from the national office, the National Council, or anyone else. Once you get the chapter going, you'll wonder why it wasn't started years ago!

Madison Avenue

Madison Avenue is the point of origin of much American advertising

(both subliminal and the more conservative types) and promotional activity. While we don't want to adopt the "hidden persuaders" and some of the other more bizarre and flamboyant techniques, we as AIC members can and must be better promoters than we have been heretofore. We have a wonderful organization, so let's tell our colleagues about it. Wear the AIC lapel button. If one of your friends asks you what it is, tell him. (If you do not have one, get it for \$1.00 from your local Chapter.)

Let us not be such a DIGNIFIED organization that we neglect to be DYNAMIC; nor so ELITE that we fail to be ALERT. Encourage the younger members to take an active part in chapter affairs and to attend the Annual Meeting. What they lack in experience, they often more than make up in energy and enthusiasm. Encourage our older colleagues to give us the benefit of their mature judgment and experience.

LET'S MAKE THIS THE BEST YEAR THAT THE AMERICAN INSTITUTE OF CHEMISTS HAS EVER HAD — BOTH QUALITATIVELY AND QUANTITATIVELY!

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Special AIC Announcements

Representatives to Perkin Medal Committee

Representatives of the AIC to the Perkin Medal Committee of the Society of Chemical Industry, American Section, are Dr. Emil Ott, AIC president, and Dr. Henry B. Hass, recent AIC past president. Dr. John H. Nair will be alternate representative for Dr. Ott, and Dr. Lloyd Van Doren for Dr. Hass.

Dr. Morris Chosen for Honor Scroll Award

Dr. Vlon N. Morris, Emeritus Fellow, AIC, formerly with Johnson & Johnson, New Brunswick, N. J., and presently at 4075 Shorecrest Drive, Orlando, Florida, will receive the Honor Scroll of the New Jersey AIC Chapter at its meeting to be held April 21, at the Military Park Hotel, Newark, N. J.

New York Chapter Officer Changes

Dr. Murray Berdick of Evans Research & Development Corp., New York 17, N. Y., will serve as Representative to the National Council from the New York Chapter. He replaces Dr. Ernest I. Becker. Dr. John L. Hickson of the Sugar Research Foundation, New York 5, N. Y., will now serve as Treasurer of the New York Chapter in place of Shepherd Stigman, who will devote his time to teaching.

Dr. Kelley to be Honored

Dr. Maurice J. Kelley, F.A.I.C., director, Industrial Specialties Labs., Nopco Chemical Co., Harrison, N.J., will receive the Honor Scroll of the New York AIC Chapter, at its May 28 meeting, Hotel Shelburne, New York, N. Y. Dr. Kelley is cited for his many thoughtful and constructive services to the AIC.

Dr. Van Doren On Vacation

Dr. Lloyd Van Doren, AIC Secretary, is taking a much-deserved vacation in Arizona for several weeks. AIC members there can find him at 508 West 15th St., Tempe, Arizona.

Alabama Chapter Elects Officers

The Alabama Chapter at its January meeting elected the following officers:

Chairman, Martin B. Williams, Rocket Development Labs., Redstone Arsenal, Huntsville, Alabama.

Vice Chairman, Dr. Charles E. Feazel, Head, Applied Chemistry Div., Southern Research Institute, Birmingham 5, Ala.

Secretary, Charles L. Smith, Southern Research Institute, Birmingham 5, Ala.

Treasurer, John M. Jernigan, President, Southern Pine Chemicals, 2503 Greensboro Ave., Tuscaloosa, Ala.

SPECIAL ANNOUNCEMENTS

National Council Representative:
Dr. Emmett B. Carmichael, Medical College of Alabama, Birmingham 3, Ala.

Nominations for President-elect and Councilors

Nomination ballots for president-elect and three councilors will be mailed to the membership early in March. Members will vote to decide which names will appear on the election ballot to be sent out in April. The names which will appear on the nomination ballot have been selected by the Committee on Nominations. Brief information about these nominees is given below:

For President-elect

Dr. John R. Bowman, Associate Dean, Professor of Science Engineering, The Technological Institute, Northwestern University, Evanston, Illinois, since 1958. (Univ. Pittsburgh, B.S. and Ph.D.; Calif. Inst. of Tech.) At University of Pittsburgh: Instructor, 1931-35; Associate Member Graduate School Faculty, 1940-57; Gulf Lecturer 1948-57. At Mellon Institute: Held multiple Fellowship on Petroleum 1935-47; Head, Department of Research in Physical Chemistry 1948-54; Director of Research 1954-57. Gordon Research Conferences: Chairman of several conferences; Trustee 1952-5 and 1957-60. Chairman, Board of Trustees, 1959-60. ACS Councilor 1947-54 and 1956-8; Chairman Pittsburgh Section 1955-6. AIC Director and Councilor-at-Large, 1950-57. Fellow AAAS, American Physical Society, and many other associations.

Dr. E. J. Durham is Director of the William H. Nichols Laboratory at New York University. He has been a Fellow of THE AMERICAN INSTITUTE OF CHEMISTS

since 1936 and has served on the Qualifications and Manpower Committees and is currently Chairman-elect of the New York Chapter. He was secretary of the New York Section of the ACS from 1944 to 1951 and was its Chairman in 1952-53. He is a Fellow of the New York Academy of Sciences and currently Chairman of the Committee on Honorary Membership of The Chemist's Club.

Dr. Bernard S. Friedman, Research Associate, Sinclair Research Labs., Inc., Harvey, Illinois. (Univ. Illinois, A.B., Ph.D. 1936.) Formerly: Instructor, Univ. Illinois; with Universal Oil Products Co.; Chemical Director, Quartermaster Depot, Philadelphia, Pa. Chairman Chicago AIC Chapter 1952; on AIC National Committee on Public Relations; Com. Professional Relations, 1954; Co-chairman, Program Committee of AIC Annual Meeting 1955. Received Honor Scroll from Chicago AIC Chapter. Director Chicago Section ACS 1952-5; National Councillor ACS 1955-7. Active in many professional and civic organizations.

Dr. Milton Harris, vice president and director, The Gillette Co., and president of Harris Research Labs., Inc., Washington, D. C., (Oregon State College, University of Washington, Yale University) was first engaged in industrial research for Cheney Brothers Silk Mills. In 1931 he became research associate for the Amer. Assoc. of Textile Chemists & Colorists at the National Bureau of Standards. From 1939 to 1944, he was director of research for the Textile Foundation, then organized the Harris Research Labs. In 1957 he also became vice president of Gillette. He has been active in the ACS since 1931. He was chairman of the Washington AIC Chapter in 1953. In 1957 he received its Honor Scroll.

Dr. W. George Parks, Hon. AIC, professor, Head, Department of Chemistry, University of Rhode Island, Kingston, (Univ. of Pennsylvania, Columbia University), joined staff of University of Rhode Island in 1931. He has been executive director, National Academy of Sciences—National Research Council; Advisory Board, Quartermaster Research & Development; director of the Gordon Research Conferences in New Hampshire since 1947. Member, ACS, AICHe, Amer.

Assoc. Textile Chemists & Colorists; Fellow, AAAS and N. Y. Academy of Sciences. On Board of Trustees of Colby Junior College; on Scientific Advisory Panel to the Sec. of the Army. For 25 years, active in research and development, including catalytic vapor phase oxidation, textile research, fire resistance of textiles, solvent extraction and organic syntheses.

For Councilors

Max Bender, Senior Research Chemist, American Cyanamid Co., Bound Brook, N. J. (Northeastern Univ. S.B. Chem. Eng.; M.I.T., S.M. Chem. Eng.; N. Y. Univ., Ph.D.Chem. 1950.) Chairman, AIC Program Committee 1954 Annual Meeting; Chairman, New Jersey AIC Chapter 1956-7; Representative to National AIC Council 1957-8; Chairman, Professional Advisory Com. N. J. Chapter 1956-8; Co-chairman, Program Com., 1959 Annual AIC Meeting; Member: AIC Com. on Implementing Objectives; Com. on Ethics. Alt. Councillor, chairman Symposium of ACS Colloid Div. 1956-8; Chairman-elect, Physical Chemical Group ACS North Jersey Section; Chairman Program Com.; Consultant, Professional Affairs Com. 1958-9.

Dr. Murray Berdick, coordinator of research, Evans Research & Development Corporation, New York, N. Y., is past chairman of the New York AIC Chapter and is program co-chairman of the 1959 AIC Annual Meeting. (George Washington University, Union College, Polytechnic Institute of Brooklyn. Eli Lilly and National Science Foundation Fellowships.) At Evans Research since 1946, he was previously at General Electric and the National Bureau of Standards. His principal research interest is in high polymers.

Dr. Lawrence T. Eby, Senior Market Development Engineer, Enjay Co., Elizabeth, N. J. (Univ. Notre Dame, B.S., M.S., Ph.D. 1941.) Formerly Research Chemist, Standard Oil Development Co., Linden, N. J. At present Chairman New Jersey AIC Chapter; Chairman of national AIC Committee on Membership 1955-9; Chairman of Publicity Committee AIC Annual Meeting 1954, Chairman, Membership Committee, North Jersey Section ACS 1952. Active in other professional and civic organizations.

Dr. Austin W. Fisher, Jr., technical staff associate, Research & Development Div., Arthur D. Little, Inc. Cambridge, Mass. (B.S. Univ. of Mass.; Sc.D. MIT.) Has worked for Barrett Div., Allied Chemical, and Publicker Industries. Joined ADL in 1946. Professionally active in AIChE, ACS, other societies and in civic activities. Member Advisory Committee on Mathematics & Science of Mass. Department of Education. Chairman of New England AIC Chapter, 1952-54; Council Representative 1954-55, AIC Councilor-at-Large 1956-58.

Albert C. Holler, vice president, Chemical & Metallurgical Division, Twin City Testing & Engineering Laboratory, Inc., St. Paul, Minn. (Univ. of Pittsburgh.) Past chairman, Twin City Chapter of AIC. Member of Sigma Xi, ACS, Geological Society of America, Am. Soc. for Testing Materials, Soc. for Applied Spectroscopy, American Oil Chemists Society, Scientific Research Society of America, Federation of Paint & Varnish Production Clubs, The Chemists' Club (N. Y.) Has published numerous papers in technical journals, dealing with analytical chemistry.

Merritt L. Kastens is assistant director of Stanford Research Institute, Menlo Park, Calif. He has previously been engaged in technical writing, industrial chemistry, and college teaching. Council member and member of Committee on Constitution and By-laws, ACS; Member executive committee, Div. of Marketing and Chemical Economics, ACS; Past-president, Western Chemical Market Research Group; Member, Technical Advisory Board, Assoc. for Applied Solar Energy; Science Information Council, National Science Foundation.

Dr. Donald B. Keyes, consultant, New York, N. Y. (B.S., Univ. New Hampshire; M.A. Columbia Univ.; Ph.D., Univ. Calif.; D.Eng. [Hon], Stevens Inst. of Tech.; D.Sci. [Hon], Univ. of New Hampshire.) Head Department of Chemical Engineering, Univ. of Illinois 1926 to 1945; on leave 1941-45 to serve on government boards in Washington, D.C. Was consultant to Heyden Chemical Corp. and Arthur D. Little, Inc. President of the AIC in 1954-55 and served on its Council.

SPECIAL ANNOUNCEMENTS

Dr. Sidney D. Kirkpatrick, Hon. AIC, editorial director, *Chemical Engineering* and *Chemical Week*. (B.S. Univ. Illinois; Honorary degrees, Clarkson Inst. Tech., Polytechnic Inst. Brooklyn.) Joined McGraw-Hill in 1921. Has served on many government missions. Active in many societies; has contributed much to professional recognition of scientific persons. Will officially reach retirement May 1, but continues on half-time basis as consultant for McGraw-Hill. Was AIC Councilor-at-Large 1956-1959.

Dr. Alex P. Mathers (University of Florida, Tulane University and George Washington U.) Member, ACS; AAAS; A.O.A.C.; Alpha Chi Sigma and Sigma Xi. Assistant Chief, Alcohol & Tobacco Tax Division Labs. Fellow AIC since 1954; Treasurer Washington AIC Chapter 1957-8 and 1958-9; Chairman, Washington Chapter Committee on Legislation.

Richard L. Moore, manager, Chemical Public Relations, W. R. Grace & Co., since 1956. Formerly officer, Foster D. Snell, Inc., N. Y. (Bucknell Univ., A.B., M.A.) New York AIC Chapter: Secretary-treas., 1952-55; Chairman 1955-56; Representative to National Council 1956-57; Chairman Budget Com. Chairman, AIC Com. on Public Relations; Chairman AIC Qualifications Com.; Chairman, Public Relations for AIC 1959 Annual Meeting. ACS: N. Y. Section, Director Public Relations 1954-56; National Councilor 1955-present; Chairman, Plant Trips, 1957 National Meeting. Alpha Chi Sigma, Chairman, N. Y. Professional Chapter, 1955-56.

Dr. John H. Nair. (D.Sc.) Consultant. Formerly associated with T. J. Lipton, Inc., and the Bordon Company. Past president and past chairman of the Board of Directors of the AIC. Past president of the Association of Research Directors. Extremely active for past 35 years in A.C.S., national, divisional and sectional affairs. Resident of Summit, N. J.

Albert F. Parks, assistant chief, Division of Technical Services, Bureau of Customs, Washington, D. C. (Arkansas College, A.B. 1929; Univ. of Tennessee; New York University, M.Sc. 1931.) Prof. of chemistry, Arkansas College 1931-36; chemist U. S. Customs Lab., New Orleans,

La. 1936-49. Active in Washington AIC Chapter, has served in capacity of treasurer and vice-president since 1954; also on legislative committee which has been active in promoting welfare of government chemists and engineers. Member ACS, American Society of Quality Control, Alpha Chi Sigma (Chemical).

Maynard J. Pro is a research chemist for the Treasury Department, Internal Revenue Service, Washington, D. C. (New York Univ.) His services to the AIC include: Membership chairman, Washington Chapter, 2 years; National chairman of AIC Committee on Legislation; chairman, Honor Award Committee of the Washington Chapter for the second term.

Angus J. Shingler is staff chemist, the Coca-Cola Company, Atlanta, Ga., since 1952. Born 1919 at Donaldsonville, Ga. (A.B. Emory University 1944.) From 1945-51 he was with U. S. Food & Drug Administration, Atlanta, and in 1951-52, U. S. Food & Drug, New York. Member ACS; Dixie Section Institute of Food Technologists — Sec.-Treas. 1958-present. Fellow AIC since 1947. Secretary-treasurer of Piedmont AIC Chapter 1958-present. Married, three children.

George H. Taft, Consultant, 9 Monument St., Concord, Mass. (Univ. of Minnesota B.S. Chemical Engineering.) Born Menomonie, Wis. 1910. Following study in graduate school in physical chemistry and bacteriology, entered sanitation field for 5 years. Employed by B. F. Goodrich Co. in research and development; manager of chemical purchasing. Deccy Products Co., Cambridge, Mass. as director of development; vice-president and director, 1945-56. Resigned to become consultant. Representative to AIC National Council from New England Chapter.

Martin B. Williams, Chemist (Rocket Fuels Research), Army Rocket & Guided Missile Agency, Redstone Arsenal, Ala. (Univ. of Alabama, B.S., M.S.) College teaching, 1941-4. Chemical Commodities Specialist, Foreign Economic Admin., 1944-5. Civilian employee U. S. Army, Tokyo, Japan, Economic & Scientific Sec., General Hqs., Far East Command; (handled chemical imports & exports, 1 yr. supervised production dyestuffs, interme-

diates, fine chemicals, 3 yrs.). Far East Criminal Investigation Lab., chief chemist to 1953. Member Delta Chi, Tau Kappa Alpha, ACS, SASI, ARS, & AOA. Chairman, AIC Committee on Chapter Activities; Contributing Ed., *THE CHEMIST*; Secretary, Alabama AIC Chapter 1957-9; Chairman Alabama Chapter 1959-60.

Dr. Lincoln T. Work, consulting engineer, New York, N. Y. (B.A., Ch.E., M.A., Ph.D. Columbia University.) Advanced to associate professor in Chemical Engineering Department at Columbia. In 1940, became director of research and development for Metal & Thermit Corp., building it from a small group to 80 persons and constructing laboratory and pilot facilities. In 1949, became an independent consultant. President of the AIC in 1952-1954, and served on its Council.

About AIC Members

Dr. Henry B. Hass, F.A.I.C., president, Sugar Research Foundation, New York, N. Y. and **Bernard E. Schaar**, Hon. AIC, of Chesteron, Ind., attended the First Bahamas Serendipity Conference, at Nassau, B.W.I., in January, organized by Dr. B. L. Frank, professor at McGill University Medical School. Dr. Hass spoke on "Serendipity in Organic Chemical Synthesis." Dr. Schaar's subject was "Serendipity in Chemical Manufacturing."

D. W. Young, F.A.I.C., his wife and daughter will go to Europe Aug. 14. He will cover the International Congress of Pure & Applied Chemistry in Munich and Wiesbaden from Aug. 30 to September 7. He will also call on Rolls-Royce Ltd. in Derby, England, as well as British petroleum companies.

Dr. Marion B. Geiger, F.A.I.C., director of general development, announces that Jules Gilbert has joined the development department, of Hooker Chemical Corporation, Niagara Falls, N. Y., as a market research analyst.

Dr. Jesse Werner, F.A.I.C., has been elected a vice president of General Aniline & Film Corporation, New York, N. Y. He was formerly director of commercial development for the Dyestuff & Chemical Division.

Dr. Robert E. Hulse, F.A.I.C., executive vice president of National Distillers & Chemical Corp., and general manager of its U. S. Industrial Chemicals Co. Division, announces that U.S.I.'s polyethylene compounding plant at Tuscola, Illinois, has just come on stream with an initial capacity of 25 million pounds per year.

Dr. H. I. Cramer, F.A.I.C., has been named a vice president of Pennsalt International Corporation S.A., subsidiary of Pennsalt Chemicals Corp., of Philadelphia, Pa. European headquarters for the subsidiary are at 38 Rue de Petit-Chêne, Lausanne, Switzerland.

Dr. Chris A. Stiegman, F.A.I.C., has been promoted to director of research for Hooker Chemical Corp., Niagara Falls, N. Y. **Dr. Alvin F. Shepard**, F.A.I.C., becomes general manager—plastics research, for the company.

(And see page 104)

The Consultant—His Contribution to the Community

Dr. Joseph W. E. Harrisson, F.A.I.C.

*Director, LaWall & Harrisson Research Laboratories, 1921 Walnut St.,
Philadelphia 3, Pa.*

(An address by the author upon receiving the Honor Scroll presented by The American Institute of Chemists, Pennsylvania Chapter, Jan. 6, 1959, Philadelphia, Pa.)

CONSULTATION is, in a measure, both an art and a practice that encompasses many fields of endeavor. But no matter whether a consultant serves in the broad field of Chemistry, Engineering or the Healing Arts, he can open new paths by reason of his unfettered imagination and ability to quicken the interest in problems. Consultants are not necessarily engaged solely in private practice; consultation may be occasional and ancillary to a professional occupation.

For instance, a consultant in the Healing Arts aids those practitioners of medicine, who are in direct contact with the patient—here the consultant is a specialist, possibly in a phase of medical science that justifies intense study of some limited body function, an anatomical location or pathologic manifestation. Or, if a practitioner of law, he may be a specialist in admiralty law, international law or corporate law. And, more recently, the Food and Drug Law, because of our rapid advances in these fields. The importance of such a specialized practice is evidenced by the

recent formation of the Food Law Institute.

But, presently we are concerned with the consultant in the chemical or chemical engineering field. As such, the consultant whether interested in drug, nutritional or industrial applications, is often the creator, if not the catalyst, of an advance in basic science or in reducing its application to industrial practice. Or, his assignment may be to serve an ailing industry—one which has encountered obstacles along a path that has previously been financially successful. Then too, he may be called upon to advise whether or not a new process or venture justifies extensive financial support. The scant knowledge that was once acceptable as being sufficient to warrant investment in a new project has been replaced by cautious and critical technological and financial evaluation.

Risk evaluation is now a governing factor whether a project is directed toward the development of an industrial process that may require millions of dollars, months of planning, and years of building, or to-

ward the creation of a fine chemical of potential therapeutic value.

Ventures are no longer job assignments but rather projects—in England, schemes—based upon predictive decisions and rarely dependent solely upon empiric methods or techniques. Yet the empiric approach is still a necessity though costly and wasteful. Methodically and hopefully it is applied even today, as evidenced by our screening of thousands of antibiotic beers—more thousands of chemicals of unknown usage—directed toward seeking a lead among the lower forms of animal life to surcease the ravages of cancer within ourselves.

In our early formative days the chemical industry grew by rule of thumb, and medicine was an art and in truth a practice. Gradually keen minds developed the basic concepts that could be applied in industry, medicine, nutrition and the many fields of human endeavor. As the 19th century opened its book but few individuals were then capable and fewer were trained in science. No matter what the field of need or the level of their scientific ability when their services were offered to industry, it generally earned for them the scorn of the practical operator. But gradually the sheer need for sound advice created openings based upon the science of the day. Much of this need was supplied by consultants who maintained small laboratories.

The Early Consultants

Few are aware of the influence consultants exerted and the contributions they made, especially during these early days of our growing industrial expansion. Often these men were respected professors or teachers in the colleges or universities wherein but little was provided in laboratory facilities. Consequently, it was in the private laboratories of these teachers that many students gained their initial and invaluable practical experience. Among these professors was James C. Booth.

Not yet twenty years of age, he went to Germany in 1832, studied under Wohler and Magnus, when it was the custom to take promising students for instruction into the private laboratories of the professors. In 1836 after visiting England and other parts of the Continent, he returned to Philadelphia. Here he opened his own laboratory, observing in his announcement that he was prepared to serve the various industries of the area. Many men who later acquired distinction were trained by Booth in this private laboratory, including John F. Frazier, professor of chemistry at the University of Pennsylvania from 1844-72, and Robert E. Rogers who had a similar post between 1853-77. Booth's laboratory continues today as Booth, Garrett and Blair, one of Philadelphia's oldest institutions and the oldest private laboratory on this continent. Booth's attainments as

a chemist were internationally respected and nationally recognized for he was president of the American Chemical Society for three successive terms.

Frederick N. Genth was contemporary with Booth and also professor of chemistry at the University of Pennsylvania. German by birth, he had been a student of Gmellin, Giessen, Kopp, Liebig and Bunsen. (Somewhat akin as if today a student had studied with Seaborg, Kendall, Saratt and du Vigneaud.) Upon emigrating to Philadelphia, which was then the center of the American chemical industry, he likewise opened a laboratory and accepted promising students as assistants. Thus Booth and Genth had a great influence on the University of Pennsylvania and the chemical industry in Philadelphia, and even upon our beloved Edgar Fahs Smith. Actually it was in Genth's laboratory that Edgar Fahs Smith, then an assistant to Genth, became acquainted with J. Lawrence Smith, probably the first outstanding organic chemist of the United States. These men were creative contributors to the surge of knowledge in their fields during the formative years of our chemical industry. Genth was also president of the ACS as was also Edgar Fahs Smith who, like Booth, served as president of the ACS for three years.

Fifty years after Booth, the American chemical industry had expanded greatly and Philadelphia was no longer

the sole center of activity. Consultants were available in many areas: In Philadelphia, Henry Leffmann, later to become Leffmann and LaWall, predecessors of LaWall & Harrison; also, Samuel P. Sadtler, now Samuel P. Sadtler & Son; in Chicago, Carl Miner, who enjoyed an enviable reputation as the Miner Laboratories; in San Francisco, Albert Hanks; and in Boston, what has become the giant of independent consulting organizations—Griffin & Little of Milk Street, predecessors of Arthur D. Little, Inc. This later group is now the outstanding independent research organization in the world, serving not only individual and corporate clients, but nations as well.

Consulting practice has now become extensive throughout the United States and it is estimated that more than 6000 scientists are engaged in the numerous private professional organizations. Some organizations have complements in excess of 100 or more scientists; many are smaller, and some consultants practice as individuals.

Numerous organizations have been formed to establish collaboration between consultants, advance the practice of consultation and maintain a sound ethical background. Among these are the American Council of Independent Laboratories and the Association of Consulting Chemists and Chemical Engineers; as well as associations of consultants in related fields

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FIG. 1.—Personal Card of Frasch circa 1870.

such as the Professional Engineers and the Professional Biologists.

But let us turn the pages back a bit, to Franklin Square, one of the four public squares in William Penn's plan of Philadelphia. There in a little pharmacy (still existent today) dispensing to the needs of his neighbors, worked a pharmacist-chemist, Hermann Frasch. In this green velvet spot, then centered among much of the chemical and pharmaceutical activity of Philadelphia, and brewing too, Frasch also practiced as a consultant (Fig. 1). From behind his demure prescription counter and off the clay bottomed cellar floor, he developed the wisdom, experience, imagination and the fumes of fancy that set the scene for his many contributions to our progress. Here was fired the intellect that made deep mining of sulfur in Louisiana, Texas, and Mexico possible, and cheap sulfuric acid a practicality. Much of today's chemical industry rests upon his work as

does much of the petrochemical industry, for he was, until his death, active in the field. Hermann Frasch gained much of his ability by the experiences of a miscellany of puzzling problems in the local industries.

It can be truly said that fertile minds are incited, kindled and quickened by challenge and use. That a pharmacist-chemist should, in the course of his work, have made outstanding contributions, was not unusual. Karl Wilhelm Scheele, in his Swedish apothecary, unfolded much about the organic acids, and Martin Heinrich Klaproth laid the first basis for today's atomic age with his separations of uranium, strontium, cerium and other metals. In fact, Klaproth, trained in his father's German Apotheke, was the first professor of chemistry at the University of Berlin (1809). Even today he is recognized by many as the father of analytical chemistry. Klaproth became known for the care exercised in his

work, his detailed reporting of both results and methods, and careful checking before publishing—qualities to be admired today. These men are justly mentioned, because though they were trained in one field, they passed into another and therein made useful and outstanding contributions.

The Satisfaction of Service

But the most rewarding return to any practitioner of a science is neither personal success nor scientific acclaim. It is the feeling of satisfaction that develops in public or personal service. Herein the chemist, the bio-chemist, and the chemical engineer, whether he be a captive employee as we sometimes refer to those in industry, a teacher, or in private practice, has the opportunity and obligation to contribute fairly of his training and experience to the welfare of the community; also to stimulate those individuals who are students in the field. There is a challenge in our rapid industrialization and threatened over-population that brings into a critical area—pure water, adequate living facilities, nutrition, sanitation, food protection and even sufficient clean air. How well and how economically these challenges are met in the future will be influenced by sound unbiased reasoning to which we as scientifically trained citizens can contribute a healthy atmosphere. Many areas seek new industries and look to the expansion of those they have, but they

must maintain adequate natural resources and clean environments. Herein lies an opportunity for service.

Working as a consultant is also fun and part of this is in the curious questions that arrive with regularity. I recall a lady apparently of Southern birth who wrote, "How much do you charge to analyze a drug for me? It is only crystals and water so I don't believe it would take very much trouble. If there is not enough in the bottle, I can add more water."

Upon writing and assuring her that adding water would not make things easier but suggesting information as to the source of the material and how it was to be used would be helpful, she replied, "How I got the crystals and what I intend to do with them surely does not concern you. My advice to you is do your job and mind your own business." We did not get the job.

As an illustration of what may be done in public service, our organization for more than one-half century has been privileged to act as consultants to the Bureau of Foods & Chemistry, Pennsylvania Department of Agriculture. To this agency is charged the responsibility of maintaining the integrity of food within the Commonwealth of Pennsylvania, which is one of the few states that has long been noted for its high standards in this respect. This has often been a position difficult to maintain, in view

of the many new arts of sophistication. My personal pleasure at having served in this consulting capacity for forty years has been most rewarding.

Work of this nature also has its amusing as well as its serious events. Some years ago when side walk soda stands were frequent, an operator was haled before the judge for repetition of an often repeated violation. He complained that his customers wanted the kind of soda he dispensed and wailed that if he tried to sell real fruit products he would have no customers. The judge looking at him with some disbelief said off handedly, "Well then tell your customers what you give them." Later an inspector upon paying a visit was received with open arms and delight. Immediately he concluded that the operator had been converted and the customers were pleased with the real product. But upon inquiry he was rendered speechless when he was shown signs on the walls that read, "All our Syrups are guaranteed to be Highly Adulterated." Business was better—labeling does not always mean the same to everybody (Fig. 2).

But let us say that the professional practice of consulting brings its rewards in its creative contributions towards new comforts for man or advances in industry; in seeing visions carried to fruition; in the many personal and scientific contacts that it develops; in the amazing and often amusing incidents that unexpectedly



FIG. 2
Card displayed in south Philadelphia
circa 1912.

occur. All of these are bound to be tinged with a degree of gladness or sadness when success or failure of a venture gradually unfolds.

While today the practice of an individual professional consultant may be limited to some specialty in which the individual is particularly adept, conclusions are often flavored and guided by others in the field or perchance in related fields. The professional consultant is indeed wisest when he accepts and seeks the advice of others. So, to effectively serve his client, he may draw upon the knowledge or experience of other privately practicing consultants or those upon the research and teaching staffs of our universities or colleges. Culmination of a venture may, therefore, represent the collaboration of men in several of the basic sciences. Their thoughts are welded together by an imaginative coordinator. In a sense, the professional consultant is the project director, building upon facts and educated intuition an answer to the

problem under consideration. While in practice a consultant may serve industry by collaborating with its executive officers, he may serve best by contact with its research staff. Often this latter approach develops during a highly specialized or technical problem. Consequently, the opinions and activities of two somewhat divergent viewpoints, i.e., that of the consultant and that of the industrial organization, complement one another.

Nor does the consultant of today play any lesser part in offering an opportunity to the recent graduate, for such an association still remains a privilege and in it there is to be had a wealth of otherwise often unattainable training and experience.

Nor should individual practice be neglected by staff members of a university or college. Such opportunities should, in fact, be sought. It is true that they often serve to increase the insufficient income of the teaching profession but this should not be the measure of their value. More important, they maintain and develop a challenge, the spirit of which is conveyed by the educator to his students. Such service when rendered within the amenities of an educator's tax-favored position, and not made dependent upon the prestige of the institution, presents no unfair disadvantage to the private consultant. But surely, the chief responsibility of great teachers is not to applied research or to consultation but rather to kindle en-

thusiasm in the minds of their students, to spark the visions of dreams to come true.

Professional Freedom

Freedom of thought should be typical of the consultant and the teacher. By such freedom our scientific advance and our industrial strength has been sparked. Restrictions that tend to narrow a field of science tend to stifle contributions. Minds trained in one field can become great in another field only so long as we maintain freedom of action and thought.

Today opportunities for professional practice, in chemistry, biochemistry, chemical engineering or other phases of chemistry, are more creative than ever. This is equally true for the consultant who may practice individually or for those who practice jointly with others as an organized group. The consultant and his staff continues to be an intimate part of American progress. To best serve his clients he must maintain their confidence—wisely, and with careful consideration of society as a whole. Only so long as a consultant maintains his integrity and freedom of action, while preserving the rights of both the public and his client, will his professional status be maintained. He can be characterized as a homogenate of layman and scientist with a striking degree of imagination, burning energy, and a degree of courage—the latter quality often required to be applied to other people's monies.

THE AMERICAN INSTITUTE OF CHEMISTS, INC., was founded upon the principle that chemistry is a profession, and for the purpose of advancing the profession. The practice of chemistry in any one of its phases by the consultant closely touches the public at large. In this measure it more nearly approaches the lay conception of a profession.

Such practice should be unhampered, never closely bounded, but have the freedoms as are enjoyed in the practice of medicine and law, yet it should be restricted so that it is maintained at a professional level. The AIC can continue to guide in this; lend its moral and professional support; and advance the beliefs that they have held in the past.

Dr. Joseph W. E. Harrisson

Dr. Ivor Griffith, F.A.I.C.

*President and Dean, Philadelphia College of Pharmacy and Science,
Philadelphia, Pa.*

(Presented when Dr. Harrisson received the Honor Scroll of the Pennsylvania AIC Chapter.)

THE man whom we salute by presenting him with the Honor Scroll Award of the Pennsylvania Chapter of THE AMERICAN INSTITUTE OF CHEMISTS has been so close to us for so many years that we have almost taken him for granted. His services to the several branches of science have been done so unostentatiously, that when he is performing the greatest of his services he is at ease with scarcely a ripple in the currents of his activities.

I like to think of his life, which has been a continuous stream of service, as having certain staccato notes which are worth recording. Born in mid-New York state, he went to work at 13 years of age in a pharmacy which also manufactured and sold chemicals to young industries, such as

Endicott Johnson Shoe Co. and Anasco, thus initiating his life in pharmaceutical chemistry.

He graduated from the Philadelphia College of Pharmacy and Science in 1917, and this was practically all of his formal education in the college area. He is a classic example of the fact that there are people who learn more in the halls of experience than they do in the halls of learning. The same college honored him in 1950 with the degree of Doctor of Science (*Honoris Causa*).

His apprentice work was done in the well-known laboratory of Dr. Charles H. LaWall, who with Harvey Wiley pioneered in the cause of pure food and pure drugs. He remained in that laboratory all through his life; and then, some ten years be-

DR. J. W. E. HARRISSON

fore the passing away of Dr. LaWall, they created the LaWall and Harrison Laboratory, which twenty years later is now one of the outstanding of such laboratories in the entire country. Their services as consultants are sought for far and wide, and the staff of the laboratory is composed of eminent men in all areas of food and drug consulting services. Dental research, pharmacological research, formula control and development, and indeed, all such facets of enterprise are services included under the canopy of the Institution.

Dr. Harrison has seen his laboratory grow to national importance, and again without ostentation. That attribute possessed by Dr. Harrison has been characteristic all through his life. As a teacher and, indeed, as a pioneer, he established at the Philadelphia College of Pharmacy and Science the Graduate School of Pharmacology, now considered a model of its kind. He was director of the Division of Pharmacology for many years and had been active in teaching work.

His personal activities are manifold. He has been national councillor for twenty years and he has been chairman of the local section of the American Chemical Society. Indeed, he sparked the incorporation of the local chapter and acted as chairman of the incorporating body. He proposed and ultimately served on the Air Pollution Committee of the ACS. He was the first executive sec-

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retary of the American Board of Clinical Chemistry, Inc., and he was one of the incorporators of that important agency. He has served for forty years as a member of the Board of Consultants of the Bureau of Foods of the Pennsylvania Department of Chemistry, being its chairman for twenty years. More recently he has been appointed chairman of the Constitution and By-Law Committee of the *United States Pharmacopeia*.

Dr. Harrison has been outstanding in his contributions, and particularly to those spheres of service that brought him no financial return. As a teacher and administrator at his Alma Mater, there are some who demanded more attention yet gave less service than Dr. Harrison, but that is one of his unusual attributes. He engaged in the field of college teaching and research for over twenty-eight years. His research contributions have been numerous and the literature of science has been enriched by his publications.

The Scroll of Honor of this INSTITUTE has never been awarded to a

more worthy person nor to one who is so great in his modesty and so modest in his greatness.

No mention has been made of his age or other such chronological data; they are not important. What is truly

important is the fact that Dr. Harrison, throughout his life to date and into the long tomorrows, has served and will serve his fellow practitioners with thoroughness and with real humility.

Presentation to Dr. Harrison

DR. Joseph W. E. Harrison, F.A.I.C., of LaWall & Harrison, Philadelphia, Pa., received the Honor Scroll of the Pennsylvania AIC Chapter, at its dinner meeting held January 6, at the Penn Sherwood Hotel, Philadelphia.

Dr. James L. Jezl of Sun Oil Company, Marcus Hook, Pa., chairman of the Chapter, presided. Dr. Ivor Griffith, president and dean of Philadelphia College of Pharmacy & Science, introduced the honor recip-

ient. Dr. Emil Ott, AIC President, presented the Honor Scroll to Dr. Harrison, who responded with an address, "The Consultant—His Contribution to the Community." (See preceding pages.)

The citation on the Honor Scroll to Dr. Harrison reads:

For his dedicated efforts in the service of chemists and chemistry and for his lifelong demonstration of the ethical practice of his profession.

A survey made by the American Association of Physics Teachers, a member society of the American Institute of Physics, shows that U. S. colleges and universities are planning to build 172 new physics buildings at an estimated cost of \$240,310,000.

North Dakota Agricultural College, Fargo, North Dakota, announces that Dr. A. E. Rheineck has been employed as professor of chemistry to continue instruction and activities in the field of protective coatings.

Robert E. Carrigan, F.A.I.C., is now chemist with Barnhardt Mfg. Co. of Charlotte, N. C.

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Do-it-Yourself Public Relations

Richard L. Moore, F.A.I.C.

EARLIER this year the honor of being chairman of the Public Relations for THE AMERICAN INSTITUTE OF CHEMISTS was bestowed upon me. Frankly, just what was expected of our committee was a bit nebulous, so the committee was quietly marking time waiting for a project. "Quietly marking time" is a polite way of saying "dying on the vine." (In fact, they nearly rhyme.) After consultation with committee member Lloyd Hall in Chicago, late in January, a plan was hatched. But to carry out the plan we'll need the help of every member in the INSTITUTE.

Here is what we would like to do. Objective one: Raise the professional standing of the chemist in the community. Objective two: Raise the public understanding of the chemist everywhere.

Now we know that the American Chemical Society, our big brother organization, does a great deal publicity-wise to create public awareness of the technical achievements of the chemist. So our job is to describe the chemist to the public as a member of the community who is no more mysterious than any other professional man serving the public.

In accomplishing our objectives, we need information about our members that you can supply. Possibly you

know something about a unique business, such as Harry Fisher's Ocean Minerals Company in California, which would make an interesting story. Just send us the information and we'll write it up. We can achieve some nationwide publicity on interesting companies, or unusual projects or positions in which chemists such as yourself are concerned, but a real do-it-yourself public relations effort has to start with you.

We can write short featurettes that many publications will use—but the material has to come from you. Perhaps you know a chemist who is the father of two sets of triplets. When we get him mentioned, we will also tell about his position as a chemist and about his company's contribution to our daily life.

Everybody talks about raising professional standards and enhancing the prestige and value of chemists. Many things have been done, but you can do a lot more by helping to public relate the chemist to the public. We need information on chemists—on you or someone you know—let's start something on this do-it-yourself basis and see what happens!

Drop me a line:

Richard L. Moore, F.A.I.C.
W. R. Grace & Co.
3 Hanover Square
New York 4, N. Y.

Communications

Graduate Schools and Industrial Careers

To the Editor:

The article by Dr. Friedman on "Time and Talents Wisely Used," (THE CHEMIST, February), was one of the best I have seen for portraying the actual work of the research chemist. So often these activities are written and talked about by people who are either at the professorial level or vice presidential level, and usually they miss the true flavor and operation of the independent scientist in the industrial laboratory. However, Dr. Friedman has certainly experienced it and has developed it along the lines which I am sure we all recognize as leading to the greatest productivity from such men.

The sequel to this article arises immediately. Since this is the kind of work that 75-80% of scientific Ph.D.'s are going to do, then the graduate study should take this into account. By and large, it seems that rarely are the doctoral candidates given competent information and instruction in how to carry the many unexpected facets of their industrial job. Dr. Friedman was fortunate in having Roger Adams, who at least gave him some understanding of the value of his time. However, there is not only this angle but the further problem that the independent scientist in an industrial laboratory will inevitably be accountable for the actions

of some four people, at the minimum, in a properly organized laboratory. While one of these will be under his immediate directions, the others will also be doing work for him. This quadruples the job of planning, interpreting, and indeed of inventing over his graduate experience. If some laboratories fail to give men this much assistance, it is probably with good reason—they may never have had the opportunity to learn to use it during their schooling period.

A graduate training designed for producing more teachers is not justified, considering that the graduates mostly end up in industry. Dr. Friedman's article should stir our graduate schools on a soul-searching operation to see if they cannot better serve the young man in their graduate school and, ultimately, the industry to which he goes.

—Dr. E. C. Hughes, F.A.I.C.
Cleveland, Ohio

AIC Objective Needs More Effort

To the Editor:

In connection with AIC objectives, here is something for members to think about. A recent issue of *Chemical & Engineering News* reported on an AFL-CIO conference on Labor and Science in Washington. Representatives present agreed that, "Unions must push the idea that industrial scientists and engineers are no longer professionals. Because they

COMMUNICATIONS

are so numerous, they are now mere employees and need the powers of collective bargaining."

Apparently we are going to have to double our efforts to "merit public esteem and justify confidence in the integrity of the chemist and chemical engineer."

—Charles E. Clodi, M.A.I.C.
Dobbs Ferry, N. Y.

Seniority

To the Secretary:

Enclosed is a clipping (Unions Claim Role in Science) from C & EN, Jan. 19 . . . I have always been opposed to unionization of scientists because, among other things, one of the fundamental principles—seniority in unions as a scale of advancement—would be the death of ingenuity or individual thinking and progress . . .

—Dr. D. S. le Beau, F.A.I.C.
St. Louis County 24, Mo.

Inspired by Limerick

To the Editor:

Seeing that excellent limerick by Dr. Hass in the Karl Herstein article in THE CHEMIST turned my mind on the matter of limericks and apropos of nothing at all, I evolved this:

There was a young man of Norwich
(pronounced Norridge)
He lived on beans, bacon, and porwich
When they asked how it tasted
Said he "All right basted
Like many a well-balanced forwich."

—P. J. Wood, F.A.I.C.
Carlton Hill, N. J.

Keep Present Format of 'The Chemist'

To the AIC Council:

I read Dr. Lowenheim's suggestion in THE CHEMIST (Feb. 1959) and the invitation to submit ideas. I am against changing the format. THE CHEMIST is distinguished from the multitude of "big" and "fat" journals, and therefore it is handy, easily carried in the pocket, and read whenever and wherever one likes. Large, fat journals are piling up on desks and night tables. Also, enlargement costs plenty of money and makes it more difficult to obtain advertising, since the rates will have to go up for the larger page sizes.

(1) I am for change in type size of all but the editorials and signed articles. By using 5 to 8 point type for programs, special announcements, professional appointments (set in two columns rather than in the new, more space requiring style), committee reports, member news, communications, meeting reports, etc., much more text can be printed without increase of paper cost.

(2) I am for change in number of pages rather than page size. If the change in type sizes, as suggested under (1) should not suffice, i.e., if there is too much editorial and advertising material to be printed for the available number of pages, then increase the number of pages as needed and whenever needed. The Editor

should have the right to determine how many pages each number of *THE CHEMIST* should have as long as a limit established for the whole year is not overstepped.

—Dr. Rudolph Seiden, F.A.I.C.
Kansas City, Missouri

Request to Reprint

Col. O. E. Roberts, Jr., F.A.I.C., secretary-treasurer of the Armed Forces Chemical Association, Washington, D. C., informs us that the *Journal* of the Association plans to reprint the article, "The Chemist in the International Geophysical Year," by Hugh Odishaw, from *THE CHEMIST*, Nov. 1958.

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Assistant Technical Director. Dyestuffs. Desirable: Ph.D. chemistry; speaking knowledge of German, French or Spanish. Necessary: Technical knowledge of uses and applications of dyestuffs; ability to cooperate with sales force. Salary up to \$20,000. Box 33, *THE CHEMIST*.

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Plastics Chemist: 14 years experience in product development and applications; epoxies, polyesters, laminates, adhesives, films. Box 34, *THE CHEMIST*.

Alco Products, Inc., Schenectady 5, N. Y., recently inaugurated a new Research Center at its plant, which includes a radio-chemical laboratory for nuclear research, a thermal laboratory, and other special units.

A Possession Forever

"It is the fashion today to deprecate the value of classical civilization for modern man; but I myself am constantly struck with the lasting validity of so much of what the Greeks and Romans thought and wrote. These thoughts are the origin of many of our most treasured traditions . . . The Greeks paved the way for modern science . . .

"It is true that Greek and Roman civilization was based on slavery and that some of their habits and practices were rather odd. Much is made of this by anticlassicist 'progressives.' And it is also true that outwardly, a modern technological society seems to have little in common with Rome—still less with the tiny, preindustrial Greek city-state. Yet human problems have a way of persisting unchanged through the most revolutionary permutations of man's environment. The product of clear, logical thought has permanent value. It is, as Thucydides put it, a 'possession forever.'

"Nowhere is this more clearly evident than in the lasting validity of Greek thought about the role of the expert—the professional man—in society. The Greeks evolved the concept that, far from entitling him to a position of power, the possession of specialized professional knowledge actually imposed on the expert a special obligation, namely to use this knowl-

edge solely for the good of others . . . This concept is basic to the position of the professional man in Western civilizations.

"The Greeks founded the first true profession and the science which belongs to it—medicine. They formulated the professional ethics of this profession in the famed Oath of Hippocrates which we have not been able to improve upon . . . Its fundamental creed of obligation and responsibility is basic to all subsequent professional codes. All are adaptations on what the Greeks originated . . .

"I am going to fly in the face of the opinions of all sorts of self-appointed experts on the needs of modern man by urging that in your spare time you make the acquaintance of the ancient Greeks and Romans—remarkably stimulating people and good company, I assure you."

—Rear Adm.

H. G. Rickover, USN

(Speaking at Stevens Institute of Technology)



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Charles Gardner, F.A.I.C., manager, Paint Chemicals Div., Witco Chemical Co., Inc., is giving a series of lectures on "Surfactants in Emulsion Paints" before Paint & Varnish Production Clubs including Houston, Texas, March 9; Dallas, Texas, March 12; Louisville, Ky., March 18; Pittsburgh, Pa., April 6, and Cleveland, Ohio, April 17.

Dr. Carl E. Barnes, F.A.I.C., was recently elected vice president for research of Minnesota Mining & Manufacturing Co., St. Paul 6, Minn.

Dr. A. G. Hill, F.A.I.C., has been named manager of the Bound Brook, N. J. plant of American Cyanamid Company.

Dr. W. T. Read, Hon. AIC, is the author of the column, "Defense Chemistry," appearing in the *Armed Forces Chemical Journal*, published bi-monthly by the Armed Forces Chemical Association, 2025 Eye St., N.W., Washington 6, D. C.

Dr. Herman B. Wagner, F.A.I.C., research director of the Tile Council of America, received the third place prize in the Glycerine Research Contest conducted by the Glycerine Producers' Association of New York, N. Y.

Dr. Roger W. Truesdail, F.A.I.C., president of Truesdail Laboratories, Los Angeles, Calif., announces the appointment of Glen A. Swinehart to head the micro-analytical section.

A. T. Schramm, resident manager, New York Office, National Aniline Div., Allied Chemical Corp., spoke on "Pure Food Colors and Legislation Affecting Their Use," before the February 24 meeting of the Niagara AIC Chapter at Buffalo, New York.

Dr. Emil Ott, AIC President, has been elected an Honorary Member of the South African Institute of Mining & Metallurgy, Johannesburg, Transvaal, for the fiscal year ending June 30, 1959.

David H. Burger, F.A.I.C., has joined Drug Processors, Inc., Adrian, Michigan, as manager of sales and market development.

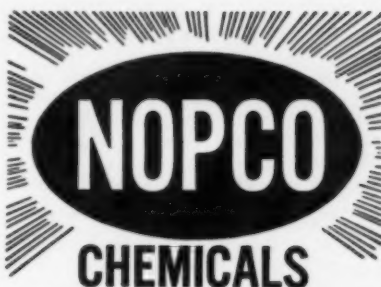
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Chemical Books Abroad

By Dr. Rudolph Seiden, F.A.I.C.

Georg Thieme Verlag, Stuttgart: *Methoden der organischen Chemie* (Houben-Weyl), by E. Mueller; Vol. XI/2: *Stickstoffverbindungen*; 4th ed., 888 pp.; DM 155.—The 10th part of this widely acclaimed work was prepared by 15 authorities on organic N compounds. It is a continuation of Vol. XI/1 (see THE CHEMIST, Nov. 1958) and covers in detail virtually every phase of the production and conversion of amines, alkylenes, aminoacids and their derivatives, lactams, quaternary ammonium compounds, and N-S compounds. There are countless literature references (into late 1957), 150 columns of author index and 76 columns of subject index.

Verlag Technik, Berlin: *Handbuch des Chemikers, Vol. II*, by B. P. Nikolski et al.; 1957, 818 pp.; DM 42.—Translated from the Russian, this book, like its 1st volume, contains hundreds of tables. They contain data on the physical properties of 98 elements, 2708 inorganic and 7916 organic compounds. There are also tables on refractive indices of thousands of substances.

Vandenhoeck & Rupprecht, Goettingen: *Grundriss der technischen Chemie, I: Verfahrenstechnik*, by C. Kroeger; 1958, 154 pp.; paperbound DM 10.60.—Part 1 of this work on chemical technology is the last one off the presses: It covers the various forms of energy and its utilization in equipment employed for transportation, pulverizing, mixing, and separating raw materials.

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"Thomas - Mitchell Chromatography Tank." Information. Arthur H. Thomas Co., P. O. Box 779, Philadelphia 5, Pa.

"Safety Tongs for handling hazardous items." Bulletin No. N-200. Machine & Instrument Design Corp., 109 Broad St., New York, N. Y.

"LabITEMS" Catalog. The Emil Greiner Co., 20 N. Moore St., New York 13, N. Y.

"Guide for Evaluating Your Science Facilities." Booklet. Request from Science Guide, Scientific Apparatus Makers Association, 20 No. Wacker Drive, Chicago 6, Ill.

"Directory of Independent Commercial Laboratories Performing Research & Development, 1957." Price 40 cents from Supt. of Documents, Govt. Printing Off., Washington 25, D. C.

"New Fume Hood for Air Conditioned Lab." Catalog DH-3, Duralab Equipment Corp., 975 Linwood St., Brooklyn 8, N.Y.

"Distillation Literature Index & Abstracts." For information: Applied Science Labs., Inc., 140 No. Barnard St., State College, Pa.

"Do Green Plants Grow in the Dark?" Request "Research Comments," Vol. 9, No. 2, from Dr. Murray Berdick, F.A.I.C., Evans Research, 250 E. 43rd St., New York 17, N. Y.

"Soviet Instrumentation and Control Translation Series." For information Instrument Society of America, 313 6th Ave., Pittsburgh 22, Pa.

"Scientific Activities in Six State Governments." Report. Price 40 cents. Supt. of Documents, U. S. Govt. Printing Off., Washington 25, D. C.

"The Chemical Industry Can't Buy Half As Well As It Knows How." Brochure. Request from Chemical Industry Advisory Board, American Standards Assoc. Dept. PR 33, 70 E. 45 St., New York 17, N. Y.

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"Principles of Frequency Response." Color-sound film. 37-minutes. For purchase or rental. For information, Instrument Society of America, 313 6th Ave., Pittsburgh 22, Pa.

"Fibers and Civilization." 30-minute color motion picture sponsored by Chemstrand Corp. For information, Modern Talking Picture Service, Inc., 3 E. 54th St., New York 22, N. Y.

"SCANOSCOPE Wide Screen closed circuit TV system." For information, Lloyd Singer & Co., Inc., 381 4th Ave., New York 16, N. Y.

"Low-cost Infrared Spectrophotometers. Infracord." Perkin-Elmer Corp., Norwalk, Conn.

"New Troemner Laboratory Balance." Information. Henry Troemner, Inc., 22nd & Master Sts., Philadelphia 21, Pa.

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Professional Appointments

- Mar. 5, 1959. Minneapolis, Minn.** University of Minnesota. Twin City Chapter jointly with the American Institute of Chemical Engineers, Minnesota Industrial Chemists Forum, and the American Chemical Society. Dinner 6:00 p.m. at the Campus Club. After-dinner speaker: Dr. J. B. Calva, J. B. Calva Co., Minneapolis, "Romance with Furs." 8:00 p.m. Chemistry Auditorium: Speaker, Dr. Abraham Wickler, U. S. Health Addiction Center, Lexington, Ky., "Mental Chemistry." For information, Albert C. Holler, Twin City Testing & Engineering Laboratory, Inc., 2440 Franklin Ave., St. Paul 14, Minn.
- Mar. 10, 1959. Washington, D. C.** O' Donnell's Sea Grill, 1223 E. St., N.W. Washington Chapter luncheon, 12:15 p.m. Speaker, Dr. Wallace Brode, Science Advisor to the Secretary of State. Subject: "Science in the State Department."
- Mar. 19, 1959. Huntsville, Alabama.** Morrison's Restaurant, No. Memorial Parkway. Alabama Chapter. Social Hour 6:00 p.m. Dinner 7:00 p.m. Panel Discussion: "Schools and the Chemist." Moderator, Arthur E. Raeuber of Southern Research Institute. Panel Speakers: Dr. E. B. Carmichael, Medical College, University of Alabama; J. V. Vaughan, Huntsville High School, and Gene A. Zerlaut, Army Ballistic Missile Agency. Reservations (Dinner \$2.25) Martin B. Williams, Ordnance Missile Lab., Redstone Arsenal, Huntsville, Ala. (JE 6-4411, Ext. 3795.)
- Spring, 1959. Los Angeles, Calif.** Date and details to be announced. Western Chapter. Dinner-dance, "just to prove chemists are people and can have fun." For information, Stuart R. Garnett, 506 W. Almond St., Compton 4, Calif.
- Mar. 26, 1959. Chicago, Illinois.** Prudential Bldg., Beaubien Room. Chicago Chapter meeting. Cocktails 6:00 p.m. Dinner 6:30. Speaker: Dr. Edward L. Haenisch, F.A.I.C., Professor of chemistry, Wabash College, currently program director for Summer Institutes, the National Science Foundation. Subject: "Activities of the National Science Foundation."
- Mar. 26, 1959. Atlanta, Georgia.** Architecture Building Auditorium, Georgia Tech. Piedmont AIC Chapter Meeting. 7:30 p.m. Speaker, Major J. J. Rosa, Research Psychologist, U. S. Air Force Missile Test Center. Subject: "Present Day Activities at Cape Canaveral." For information: A. J. Shingler, The Coca-Cola Co., P.O. Drawer 1734, Atlanta 1, Ga.
- April, 1959. Niagara Falls, N. Y.** Niagara Chapter meeting. Day and details to be announced.
- Apr. 2, 1959. Pittsburgh, Pa.** Fairfax Dining Room, 4614 5th Ave., Pennsylvania Chapter Meeting. Social Hour 6:00 p.m. Dinner 6:30 p.m. Meeting 8:00 p.m. Chairman, Dr. Delbert F. Jurgensen. Speaker, Dr. Emil Ott, AIC President, "Professional Obligations of the Chemist." For reservations (Dinner \$3.00. Reservation deadline Mar. 26): Dr. Erle B. Ayres, Callery Chemical Co., 9600 Perry Highway, Pittsburgh 37 (FOrest 4-1130), or Dr. John H. Nair III, Melloa Inst., 4400 5th Ave., Pittsburgh 13 (MAyflower 1-1100).

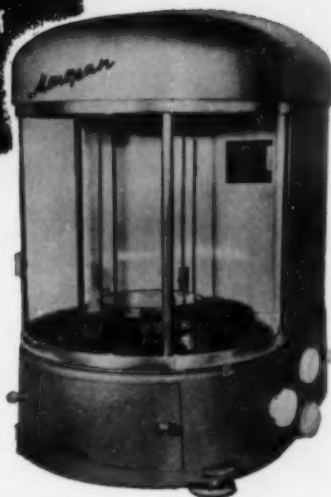
- Apr. 6, 1959. Boston, Mass.** AIC Social Hour to be held immediately preceding the Gordon Research Conferences dinner, scheduled as part of the American Chemical Society National Meeting. For information: Dr. J. Horace Faull, Jr., 72 Fresh Pond Lane, Cambridge, Mass.
- Apr. 7, 1959. Atlanta, Georgia.** Emory Alumni Building. Piedmont Chapter meeting, 6:30 p.m. Speaker, Mrs. Annie Sue Brown, recipient of Atlanta's Woman of the Year in Science Award. Subject, "Science Education in the Atlanta School System." For information: A. J. Shingler, The Coca-Cola Co., P.O. Drawer 1734, Atlanta 1, Ga.
- Apr. 16, 1959. New York, N. Y.** The Chemists' Club, 52 E. 41st St. New York Chapter meeting. Social Hour 5:30 p.m. Dinner 6:30 p.m. Address 7:30 p.m. Speaker: Earl Ubell, science editor, *New York Herald Tribune*. Subject: "Community Recognition—How the Chemist Can Achieve It." (To be discussed: Professional responsibility of the successful chemist. Public relations techniques for obtaining recognition. Working with editors . . . with others who contribute to the chemist's recognition. Benefits to the chemist . . . to the profession . . . to society.) Reservations: (Dinner \$4.90. No charge to those attending address only), Robert R. Dean, Westvaco Chlor-Alkali Div., 161 E. 42nd St., New York 17, N. Y. (MU 7-7400).
- Apr. 21, 1959. Newark, N. J.** Military Park Hotel. New Jersey Chapter. Annual Awards Meeting and Banquet. Honor Scroll to be presented to Dr. Vlon N. Morris, F.A.I.C. Emeritus. Student medals to be presented. Cocktails 6:00 p.m. Dinner 7:00 p.m. Program 8:00 p.m. Friends, members of AIC and wives cordially invited. For program details, Dr. H. R. McCleary, chairman, Honor Scroll Program and Arrangements, American Cyanamid Co., Bound Brook, N. J. (ELliott 6-2000). For reservations, Dr. John F. Mahoney, Merck & Co., Inc., Rahway, N. J. (FULTon 1-5000, Ext. 3254).
- May 6, 1959. Atlantic City, N. J.** Traymore Hotel. The AIC President's Reception to the Officers, National Councilors, Members of the Annual Meeting Committee, and their wives. 5:30 p.m.
- May 6, 1959. Atlantic City, N. J.** Traymore Hotel. Belvedere Room, 11th Floor. Meeting of the AIC Board of Directors and Council. 6:30 p.m.
- May 7-8, 1959. Atlantic City, N. J.** Traymore Hotel. Thirty-sixth Annual AIC Meeting. Theme: "The Chemist and Engineer in Our Economy." The New York and New Jersey Chapters will be hosts.
- May 14, 1959. Philadelphia, Pa.** Engineers' Club. Pennsylvania Chapter. Student Award Night. Speaker and topic to be announced. For reservations, Dr. W. E. Langeland, Wyeth Institute, Radnor, Pa. (MURray 8-4400).
- May 19, 1959. Linden, N. J.** Esso Refinery. New Jersey Chapter Plant trip. Tour begins at 3:00 p.m. Advance reservations and registration required as number for tour is limited. Business meeting and dinner to follow tour. For details: Dr. Stephen E. Ulrich, Chairman, Program Committee, Rutgers University, New Brunswick, N. J. (CHarter 7-1666). For reservations: Dr. John F. Mahoney, Merck & Co., Inc., Rahway, N. J. (FULTon 1-5000, Ext. 3254).
- May 28, 1959. New York, N. Y.** Hotel Shelburne, 37th St. & Lexington Ave., New York Chapter. Honor Scroll to be presented to Dr. Maurice J. Kelley, F.A.I.C. Social Hour 5:30 p.m. Speakers to be announced.
- June, 1959. Niagara Falls, N. Y.** Niagara Chapter Meeting. Date and details to be announced.
- May 11-13, 1960. Minneapolis, Minn.** Radisson Hotel. 37th Annual AIC Meeting. The Twin City Chapter will be our host.
- May 11-12, 1961. Washington, D. C.** Statler Hotel. 38th Annual AIC Meeting. The Washington Chapter will be our host.



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NOTICE the convenient positioning of the controls on this balance to eliminate fatigue . . . the recessed, glare-free reading scale at the rear of the weighing chamber—located in the same field of vision as the removable pan . . . the easily accessible compartment in the base which houses the built-in weights and accessories, protecting them from fumes and dust. This construction also eliminates torque action on the beam. These are but a few of the many outstanding features of the *Monopan*—an easy-to-operate instrument built for years of trouble-free service with consistently accurate results. Write for detailed brochure.

Capacity—200 g.

Sensitivity—0.1 mg.

Precision — \pm .05 mg.

Optical Scale Range—110 mg.

1 Scale Division—1 mg.

Readability — .05 mg.

Damping—Air

Taring Device—up to 26 g.

B-1370X *Monopan*, as illustrated, complete with built-in adjustable transformer for 110-220 volt A.C. (fully assembled)
Price \$890.00



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